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New version of patent claim 1

1. A computer tomograph having:

- a radiation source (41) for emission of X-ray  
5 radiation (40) with a predetermined intensity and a  
predetermined spectrum;
- a detector unit (2), which comprises a large  
number of detectors (1), for verification of X-ray  
radiation (40), with the individual detectors (1) in  
10 the detector unit (2) being designed to receive  
incident X-ray quanta in the X-ray radiation (40) and  
to detect the number of X-ray quanta in the received  
X-ray radiation (40) whose quantum energy exceeds a  
predetermined threshold value;
- 15 - a transmission device (43) for transmission of the  
information detected by the detectors (1) in the  
detector unit (2) to an evaluation device (44); and
- an evaluation device (44) which is designed to  
calculate a measurement result from a measurement  
20 object (42) through which the X-ray radiation (40) has  
passed on the basis of the information detected by the  
detectors (1) in the detector unit (2);  
characterized  
in that the individual detectors (1) in the detector  
25 unit (2) are designed to detect both the intensity and  
the quantum energy of the individual X-ray quanta in  
the received X-ray radiation (40), and, for each  
measurement period, to emit a spectrum which, in  
addition to information about the number of X-ray  
30 quanta of medium quantum energy received in each  
measurement period, and hence the intensity, also  
contains information about the respective quantum  
energy in the X-ray quanta, and thus the spectrum of  
the received X-ray radiation; and

in that the evaluation device (44) is also designed to calculate the measurement result from the measurement object (42) on the basis of the information detected by the detectors (1) relating to the intensity and

quantum energy of the individual X-ray quanta in the received X-ray radiation (40), taking into account the intensity and the spectrum of the X-ray radiation (40) emitted from the radiation source (41).

New version of patent claim 7

7. A method for verification of X-ray radiation by means of a computer tomograph which has a detector unit  
5 (2) comprising a large number of detectors (1), having the following steps:  
- detection of the number of X-ray quanta whose quantum energy exceeds a predetermined threshold value of the X-ray radiation (40) received by means of the  
10 individual detectors (1) in the detector unit (2);  
- transmission of the information detected by means of the detectors (1) in the detector unit (2) to an evaluation device (44); and  
- calculation of a measurement result from a  
15 measurement object (42) through which the X-ray radiation (40) has passed by means of the evaluation device (44) on the basis of the information detected by the detectors (1) in the detector unit (2);  
characterized  
20 in that both the intensity and the quantum energy of the individual X-ray quanta in the X-ray radiation (40) received by means of the individual detectors (1) in the detector unit is detected,  
in that the individual detectors (1) in the detector  
25 unit (2) emit, for each measurement period, a spectrum which, in addition to information about the number of X-ray quanta of medium quantum energy received in each measurement period, and hence the intensity, also contains information about the respective quantum  
30 energy of the X-ray quanta, and thus the spectrum of the received X-ray radiation, and  
in that the measurement result from the measurement object (42) is calculated by means of the evaluation device (44) on the basis of the information detected by  
35 the detectors (1) relating to the intensity and quantum energy of the individual X-ray quanta in the received

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X-ray radiation (40), taking into account the intensity and the spectrum of the X-ray radiation (40) emitted from a radiation source (41).